REMARKS

Applicants appreciate the Examiner's thorough consideration provided to the present application. Claims 1-9 and 18-20 are currently pending in the instant application. Claim 18 has been amended. Claims 10-17, withdrawn from further consideration by the Examiner, have been cancelled. Claims 1 and 18 are independent. Reconsideration of the present application is earnestly solicited.

Reasons for Entry of Amendment

As discussed in greater detail hereinafter, Applicants respectfully submit that the rejections under 35 U.S.C. § 103(a) are improper and should be withdrawn. Accordingly, the finality of the Final Office Action mailed on September 18, 2002 should be withdrawn.

In accordance with the requirements of 37 CFR 1.116, Applicants respectfully request entry and consideration of the foregoing amendments and remarks as they remove issues for appeal (claims are cancelled) and place the current application in a condition for allowance.

Election/Restriction

Claims 10-17 have been withdrawn from further consideration by the Examiner. Without conceding the propriety of the Examiner's withdrawal of

these claims from consideration, but merely to expedite the prosecution of the present application, Applicants have cancelled claims 10-17.

Claim Rejections Under 35 U.S.C. § 103

Claims 1-8 and 18-20 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Cook et al. (U.S. Patent No. 3,800,392) in view of JP 55-152108 ('108). Claim 9 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Cook et al. in view of JP 55-152108 ('108), and further in view of Hill et al. (U.S. Patent No. 4,011,055). These rejections are respectfully traversed.

Applicants respectfully submit that the prior art of record fails to teach or suggest each and every element of the combination of elements of the claimed invention. Specifically, the Examiner has not identified "*an annular structural core having at least one sinusoidally-shaped mounting surface*" (see claim 1) anywhere in the prior art of record. Accordingly, this rejection should be withdrawn. In addition, Applicants submit that the alleged combination of Cook et al. in view of the '108 reference would not have been obvious.

In contrast to the prior art of record, the claimed invention includes a friction disk for a brake assembly having an annular structural core and at least one frictional lining element. *Both* the annular structural core and the frictional lining element *each* include sinusodially-shaped mounting surfaces,

e.g., side(s) of the annular structural core and each frictional lining element include a sinusoidally-shaped mounting surface. Further, the mounting surface is not an independent element mounted or formed between the core and frictional lining element. Neither the Cook or '108 reference show or describe this unique combination of features.

The Cook reference clearly teaches that the mounting surface and the frictional lining element are flat, particularly along the surfaces where the mounting surface and the frictional lining element engage/mate. Further, the Examiner has not identified a single art recognized problem that would motivate one of ordinary skill in the art to attempt to modify the flat mounting surfaces of the Cook brake disk assembly. Accordingly, this teaching or suggestion must come from the '108 reference or from Applicants' own teachings. Since the Examiner has not identified this feature in the Cook or '108 reference, this teaching is clearly being gleaned from Applicants' own teachings.

Applicants submit that this feature has not been identified anywhere in the prior art of record. It appears that the Examiner's position is that the '108 reference implicitly suggests modifying the Cook reference to include the features of the claimed invention, without ever describing or showing these features that are allegedly added to the Cook reference. Applicants submit that this position is improper.

For example, the claimed invention provides a secure, reliable way of mounting replaceable frictional elements that is not particularly labor intensive and with fewer elements than those shown in the '108 reference. Since the frictional elements and the annular structural core are specifically shaped to mate with one another, no intermediate layer is required therebetween. In contrast to prior art attempts to incorporate sinusodially shaped wear surfaces that interlock with one another into brake assemblies, e.g., GB 2085 098A reference recently submitted with the IDS filed on November 7, 2002, the claimed invention utilizes sinusodially shaped mounting surfaces that still permit relatively flat wear surfaces. In the GB '098 reference, the shaped wear surfaces result in premature wear of component parts and excessive dirt and debris, e.g., dust that may interfere with components of a brake assembly.

In the '108 reference relied upon by the Examiner, an intermediate layer is specifically and clearly required to mount the mounting core and the friction lining discs. The translation explicitly states that the "adhesive layer powder is charged into a mold to be disposed at the adhesive surface side of a sintered frictional block 1, a frictional powder is then charged into the mold to press the powder so as to mold a molded element having a frictional material 1a and an adhesive layer 3." Therefore, a frictional material and an adhesive layer (layer 3 in the figures shown) are clearly arranged between the sintered frictional block 1 and the core (described as cooper-plated steel reinforcing plate 2 clearly

shown in FIG. 4). The Examiner is reminded that the adhesive layer only 3, and not the core 2, are sinusoidally shaped. Therefore, neither of these references show an "annular structural core having a sinusodially shaped mounting surface." Accordingly, this rejection should be withdrawn.

The Examiner is aware of this shortcoming. In response to this argument, the Examiner has altered the rejection to suggest that the Examiner is only relying upon the concepts implicitly taught by the '108 reference, not the actual elements shown. The Examiner has also avoided referring to the specific claim language of the claimed invention when the comparison with the prior art has been made.

For example, on page 2-3 of the Final Office Action, the Examiner indicates "The principal reference to Cook et al (3800392) discloses the invention substantially as claimed. However, the principal reference to Cook et al. (3800392) *does not disclose the feature of claim 1 and claim 18 re the use of a mounting surface between a friction lining and its core which is sinusoidally shaped.*" This characterization is improper and traversed.

The Examiner is reminded that Applicants have not claimed the "*use of a mounting surface between a friction lining and its core*" as suggested by the Examiner. The friction lining element(s) and the annular structural core of claims 1 and 18 *each* include sinusoidally shaped mounting surfaces, not a separate intermediate mounting surface or elements as suggested by the

Examiner. The sinusoidally shaped mounting surfaces in the claimed invention are part of the core and the friction lining element(s) respectively, not separate elements as in the '108 reference.

Although the present invention may include an intermediate adhesive or bonding agent, a specific advantage of the claimed invention is that the annular structural core and friction lining element(s) are specifically designed to matingely engage with one another thereby increasing the surface area contacting between the two surfaces, e.g., with sinusoidally shaped mounting surfaces. In the prior art of record, the mounting surfaces of the structural core are flat and do not include the advantageous sinusoidal mounting surface of the claimed invention. Accordingly, this rejection with respect to claim 1 should be withdrawn.

With respect to claim 18, Applicants have amended the claimed invention to clearly state that an annular structural core is matingly and directly engaging the mounting surface of the first frictional lining element and the second frictional lining element, e.g., without any intermediate layers therebetween. Applicants submit that this combination of features is clearly not shown in the prior art of record.

In accordance with the above discussion of the patents relied upon by the Examiner, Applicants respectfully submit that these documents, either in

combination together or standing alone, fail to teach or suggest the invention as is set forth by the claims of the instant application.

Accordingly, reconsideration and withdrawal of the claim rejection are respectfully requested. Moreover, the Applicants respectfully submit that the instant application is in a condition for allowance.

As to the dependent claims, Applicants respectfully submit that these claims are allowable due to their dependence upon an allowable independent claim, as well as for additional limitations provided by these claims.

CONCLUSION

Since the remaining patents cited by the Examiner have not been utilized to reject the claims, but rather to merely show the state-of-the-art, no further comments are necessary with respect thereto.

Attached hereto is a marked-up version of the changes made to the application by this Amendment.

In the event there are any matters remaining in this application, the Examiner is invited to contact Matthew T. Shanley, Registration No. 47,074 at (703) 205-8000 in the Washington, D.C. area.

Applicants respectfully petition under the provisions of 37 C.F.R. § 1.136(a) and § 1.17 for a one-month extension of time in which to respond to the

Examiner's Office Action. The Extension of Time Fee in the amount of **$110.00** is attached hereto.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §§1.16 or 1.17; particularly, extension of time fees.

Respectfully submitted,

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Attachment: Version with Markings to Show Changes Made

MARKED-UP VERSION OF AMENDMENTS

IN THE CLAIMS:

Claims 10-17 have been cancelled.

The claims have been amended as follows:

18. (Amended) A friction disk for a brake assembly comprising:

an annular structural core having a first sinusoidally-shaped mounting surface and a second sinusoidally-shaped mounting surface;

a first frictional lining element having a sinusoidally-shaped mounting surface and a relatively, flat wear surface, said mounting surface of said first frictional lining element matingly and directly engaging said first mounting surface of said structural core; and

a second frictional lining element having a sinusoidally-shaped mounting surface and a relatively, flat wear surface, said mounting surface of said second frictional lining element matingly and directly engaging said second mounting surface of said structural core.